

Serial No. 09/742,669
Page 9

REMARKS

In the Office Action, the Examiner notes that claims 1-26 are pending in this Application and that claims 1-26 stand rejected. By this response, claims , 13, 18-19, 21 and 26 are amended to correct for informalities pointed out by the Examiner and not in response to prior art. All other claims continue unamended.

In view of both, the following discussion and the above amendments, the Applicant submits that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103. Furthermore, the Applicant also submits that all of these claims now satisfy the requirements of 35 U.S.C. §112. Thus, the Applicant believes that all of these claims are now in allowable form.

REJECTIONS

A. 35 U.S.C. § 112

The Examiner rejected claims 6, 13, 18-19, 21 and 26 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regard as the invention.

claim 6

Regarding claim 6, the Examiner states that claim 6 recites the limitation "said step of communicating the VBR data stream using CDM/CDMA" in lines 1-2 and that there is insufficient antecedent basis for this limitation in the claim. The Examiner suggested that the rejection may be overcome by changing VBR to CBR.

In response, the Applicant has amended claim 6 to recite "said step of communicating the CBR data stream using CDM/CDMA" in lines 1-2 as suggested by the Examiner.

Having made this change, the Applicant respectfully submits that the basis for the Examiner's rejection of claim 6 has been removed. As such, the Applicant respectfully requests that the Examiner's rejection of claim 6 be withdrawn.

277513-1

Serial No. 09/742,669
Page 10

claims 13 and 26

Regarding claims 13 and 26, the Examiner states that claims 13 and 26 recite the limitation that "one of the first spreading factor codewords are different from the second spreading factor codewords and the first spreading factor codewords are the same as the second spreading factor codewords". The Examiner states that it is unclear what this limitation means.

In response, the Applicant has amended claims 13 and 26 to recite "wherein the first spreading factor codewords are the same as the second spreading factor codewords."

Having made this change, the Applicant respectfully submits that the basis for the Examiner's rejections of claims 13 and 26 has been removed. As such, the Applicant respectfully requests that the Examiner's rejection of claims 13 and 26 be withdrawn.

claims 18-19 and 21

Regarding claims 18-19 and 21, the Examiner states that claims 18-19 and 21 recite the limitation "the receiver" in line 2 and that there is insufficient antecedent basis for this limitation in the claims.

In response, the Applicant has amended claims 18-19 and 21 to recite "a receiver" to correct for the informalities pointed out by the Examiner.

Having made these changes, the Applicant respectfully submits that the basis for the Examiner's rejections of claim 18-19 and 21 has been removed. As such, the Applicant respectfully requests that the Examiner's rejection of claims 18-19 and 21 be withdrawn.

B. 35 U.S.C. §103

The Examiner has rejected claims 1-3, 5, 9, 11-16, 18, 22 and 24-26 under 35 U.S.C. § 103(a) as being unpatentable over Kim et al. (U.S. Patent No.

Serial No. 09/742,669
Page 11

6,711,144, hereinafter "Kim") In view of Turcotte et al. (U.S. Patent No. 6,181,684, hereinafter "Turcotte"). The rejection is respectfully traversed.

The Examiner alleges that regarding claims 1 and 14, Kim discloses a method of transmitting voice (CBR) using CDMA and data (VBR) using TDMA. The Examiner further alleges that Kim discloses the step of determining whether the data stream is CBR or VBR by indicating that these two types of traffic are transmitted using different multiple access methods. However, the Examiner concedes that Kim does not disclose the limitation of using a combination of TDMA and CDMA with second spreading factor codewords. As such the Examiner cites Turcotte for teaching the use of a combination of multiple access techniques in transmitting data. The Examiner alleges that Turcotte teaches that any combination of the listed multiple access techniques (including CDMA and TDMA) can be used. The Applicant respectfully disagrees.

The Applicant respectfully submits that any allowable combination of Kim and Turcotte fail to teach, suggest or make obvious at least the Applicant's claim 1, which specifically recites:

"A method of communicating Constant Bit Rate ("CBR") data and Variable Burst Rate ("VBR") data in a single RF carrier via a communication system, said method comprising the steps of:

determining whether the data stream is CBR or VBR;

when said data stream is CBR, communicating the CBR data stream using Code Division Multiplexing/Code Division Multiple Access ("CDM/CDMA") with first spreading factor codewords, whereby a CBR-CDMA data signal is generated; and

when said data stream is VBR data, communicating the VBR data stream using Time Division Multiplexing/Time Division Multiple Access ("TDM/TDMA") and CDM/CDMA with second spreading factor codewords." (emphasis added).

The Applicant respectfully submits that Kim and Turcotte, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Applicant at least with respect to claim 1 for "communicating the CBR data stream using Code Division Multiplexing/Code Division Multiple Access

277513-1

Serial No. 09/742,669
Page 12

("CDM/CDMA") with first spreading factor codewords" and "communicating the VBR data stream using Time Division Multiplexing/Time Division Multiple Access ("TDM/TDMA") and CDM/CDMA with second spreading factor codewords" as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1. More specifically, in support of at least claim 1, the Applicant in the Specification specifically recites:

"In any embodiment according to this invention, the appropriate CBR spreading factor is determined and fixed. The VBR spreading factor, on the other hand, depends on the amount of the VBR traffic: the more VBR traffic, the smaller the factor. At the same time, the smaller the VBR factor, the fewer CBR users that can be supported. Hence, the VBR spreading factor is a parameter that determines the trade-off of how much of both types of traffic has to be handled. That parameter need not be fixed, e.g., it could be periodically adjusted to the traffic profile. In addition, the VBR spreading factor can depend only on the total amount of VBR traffic and on the number of CBR users. The number of VBR users need not enter into the trade-off. The number of VBR users that can share the VBR signal is determined by how that signal is partitioned in time slots, independently of the spreading factors." (See Specification, page 7, lines 9-19).

The Applicant further recites:

"More particularly, the spreading factor for the CBR streams is readily determined from the data rate required by the corresponding application. A voice telephony session, for instance, requires a data rate on the order of 10 Kbps, which can be attained with a relatively large spreading factor (64 is commercial value in IS-95 CDMA). A video session would require a higher data rate and thus a smaller spreading factor, etc. The method of determining the spreading factor for CBR signals is known to those of ordinary skill in the art, for example, as based on the required data rate and the chip rate of the system, which is a parameter that is given by the available bandwidth. From the spreading factors, the transmit power required by every stream can be also calculated easily given some target Signal-to-Interference Ratio (SINR), the interference level, and the location of the corresponding terminal. Since the CBR signals have strict requirements in terms of service, they should be allocated power first. Once they all have their required power, whatever power is left from the available power budget is allocated to the VBR

Serial No. 09/742,669
Page 13

signal. The spreading factor of the VBR signal is then adjusted, on a slot-by-slot basis, so that the VBR users can also meet their target SINR given their levels of interference, location, and data rate. Notice that every slot corresponds to a different VBR data stream, thus the need to vary (possibly) the VBR spreading factor. Also, the power requirements of the CBR users will vary over time and that will cascade into a variation in the leftover power for VBR and thus into corresponding spreading.

The architecture of a multiple access (implying many transmitters and a single receiver) implementation of the present invention is shown in Fig. 1. In the multiple access architecture, the transmitters first spread VBR data using CDMA with a VBR spreading factor, thereby creating VBR-CDMA data. The transmitters then upconvert the VBR-CDMA data to the appropriate RF carrier frequency and perform the TDMA interleaving by bursting the VBR-CDMA RF data transmissions at individual time slots within the allocated VBR-CDMA bandwidth, thus transmitting VBR-CDMA-TDMA data." (See Specification, page 7, line 20 through page 8, line 18).

It is evident from at least the portions of the Applicant's specification presented above, that the invention of the Applicant is directed, at least in part, to a method and communication system wherein CBR data stream is communicated using CDM/CDMA with first spreading factor codewords and VBR data is communicated using TDM/TDMA and CDM/CDMA with second spreading factor codewords. In the invention of the Applicant, the first spreading factor for the CBR data is first determined since the CBR signals have strict requirements in terms of service. The second spreading factor codewords for the VBR data is determined at least from what is left of a total power budget after CBR power allocation and from VBR SINR requirements.

As conceded by the Examiner and agreed upon by the Applicant, there is absolutely no teaching, suggestion or disclosure in Kim for using a combination of TDMA and CDMA with second spreading factor codewords for communicating VBR data as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1. Furthermore, the Applicant submits that there is absolutely no suggestion or motivation in either Kim or Turcotte to combine the teachings of the references to attempt to teach the invention of the Applicant.

Serial No. 09/742,669

Page 14

That is, for prior art reference to be combined to render obvious a subsequent invention under 35 U.S.C. § 103, there must be something in the prior art as a whole which suggests the desirability, and thus the obviousness, of making the combination. Uniroyal v. Rudkin-Wiley, 5 U.S.P.SQ.2d 1434, 1438 (Fed. Cir. 1988). The teachings of the references can be combined only if there is some suggestion or incentive in the prior art to do so. In re Fine, 5 U.S.P.SQ.2d 1596, 1599 (Fed. Cir. 1988). **Hindsight is strictly forbidden. It is impermissible to use the claims as a framework to pick and choose among individual references to recreate the claimed invention** Id. at 1600; W.L. Gore Associates, Inc., v. Garlock, Inc., 220 U.S.P.Q. 303, 312 (Fed. Cir. 1983).

Moreover, the mere fact that a prior art structure could be modified to produce the claimed invention would not have made the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992); In re Gordon, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). More specifically, the Applicant submits that the teachings of Kim for a method of transmitting CBR using CDMA and VBR traffic using TDMA comprises no suggestion or motivation for the combination of the teachings of Turcotte for a method and apparatus for statistical multiplexing for a wireless communication system and vice versa.

The Applicant further submits that even if there was a motivation or suggestion to combine the references in either of the references (which the Applicant believes that there is none), the teachings of the Turcotte fail to bridge the substantial gap between the Kim reference and the Applicant's invention at least with respect to the Applicant's claims 1 and 14. That is, the combination of the teachings of Kim and Turcotte would result in a method and apparatus for optimizing utilization of bandwidth in a communications network comprising partitioning at least one wireless communication link into X communication channels and assigning N communication sources of the multiple communication sources to communicate information over an air interface through the X communication channels for a first predetermined time interval, wherein X has a

Serial No. 09/742,669

Page 15

numeric value which is less than a numeric value of N. In the combined method and apparatus, assigning N communication sources of the multiple communication sources to communicate information over an air interface through the X communication channels for the first predetermined time interval comprises receiving a request for a channel assignment from a communication source, the request including a requisition for a connection corresponding to a desired level of quality of service during a first time interval, determining for a second predetermined time interval whether the desired level of quality of service is available for assignment during the first time interval, if the desired level of quality of service is available for assignment during the first time interval, assigning the communication source a communication channel corresponding to the desired quality of service during the first time interval, and if the desired level of quality of service is not available for assignment during the first time interval, determining if the communication source is willing to accept the channel assignment to communicate using one of the X communication channels corresponding to a next available level of quality of service during the first time interval, and if the communication source is willing to accept an assignment to communicate using one of the X communication channels corresponding to the next available level of quality of service during the first time interval, assigning the communication source to the one X communication channels corresponding to the next available level of quality of service during the first time interval, wherein CBR data is communicated using CDMA and VBR data is communicated using TDMA.

However, there is absolutely no teaching, suggestion or disclosure in Kim and Turcotte alone, or in any allowable combination for "communicating the CBR data stream using Code Division Multiplexing/Code Division Multiple Access ("CDM/CDMA") with first spreading factor codewords" and "communicating the VBR data stream using Time Division Multiplexing/Time Division Multiple Access ("TDM/TDMA") and CDM/CDMA with second spreading factor codewords" as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1. That is, Kim and Turcotte, alone or in any allowable

277513-1

Serial No. 09/742,669

Page 16

combination, fail to teach, suggest or make obvious the invention of the Applicant at least with regard to claim 1 and "communicating the CBR data stream using Code Division Multiplexing/Code Division Multiple Access ("CDM/CDMA") with first spreading factor codewords" and "communicating the VBR data stream using Time Division Multiplexing/Time Division Multiple Access ("TDM/TDMA") and CDM/CDMA with second spreading factor codewords". As previously described above, in the invention of the Applicant, since the CBR signals have strict requirements in terms of service, they are allocated power first, and whatever power is left from the available power budget is allocated to the VBR signal. The spreading factor of the VBR signal is then adjusted on a slot by slot basis so that the VBR users can also meet their target SINR given their levels of interference, location, and data rate. The Applicant further teaches that the power requirements of the CBR users will vary over time and that will cascade into a variation in the leftover power for VBR and thus into corresponding spreading. (See Specification, page 8, lines 4-11). The Applicant strongly submits that Kim and Turcotte, alone or in any allowable combination, absolutely fail to teach, suggest or make obvious at least "communicating the CBR data stream using Code Division Multiplexing/Code Division Multiple Access ("CDM/CDMA") with **first spreading factor codewords**" and "communicating the VBR data stream using Time Division Multiplexing/Time Division Multiple Access ("TDM/TDMA") and CDM/CDMA with **second spreading factor codewords**" as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1.

For at least the reasons described herein, the Applicant respectfully submits that the teachings of Kim and Turcotte, alone or in any allowable combination, fail to teach, suggest or make obvious, the invention of the Applicant at least with respect to independent claim 1.

Therefore, the Applicant submit that independent claim 1, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

277513-1

Serial No. 09/742,669
Page 17

Likewise, independent claim 14 recites similar relevant features as recited in independent claim 1. As such and for at least the reasons disclosed herein, the Applicant respectfully submits that independent claim 14 is also not rendered obvious by the teachings of Kim and Turcotte, alone or in any allowable combination, and also fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

Furthermore, dependent claims 2-13 and 15-26 depend either directly or indirectly from independent claims 1 and 14 and recite additional features therefor. As such and for at least the reasons set forth herein, the Applicant submits that none of these claims are obvious with respect to the teachings of Kim and Turcotte, alone or in any allowable combination. Therefore the Applicant submits that dependent claims 2-13 and 15-26 also fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims independently in subsequent prosecution.

C. 35 U.S.C. §103

The Examiner has rejected claims 1-26 under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Sato (U.S. Patent No. 5,511,068). The rejection is respectfully traversed.

The Examiner alleges that regarding claims 1 and 14, Kim discloses a method of transmitting voice (CBR) and data (VBR) using TDMA. The Examiner further alleges that Kim discloses the step of determining whether the data stream is CBR or VBR by indicating that these two types of traffic are transmitted using different multiple access methods. However, the Examiner concedes that Kim does not disclose the limitation of using a combination of TDMA and CDMA with second spreading factor codewords. As such the Examiner cites Sato for teaching the use of a combination of multiple access techniques in transmitting data. The Applicant respectfully disagrees.

277513-1

Serial No. 09/742,669
Page 18

The Applicant respectfully submits that any allowable combination of Kim and Sato fail to teach, suggest or make obvious at least the Applicant's claim 1, which specifically recites:

"A method of communicating Constant Bit Rate ("CBR") data and Variable Burst Rate ("VBR") data in a single RF carrier via a communication system, said method comprising the steps of:

determining whether the data stream is CBR or VBR;

when said data stream is CBR, communicating the CBR data stream using Code Division Multiplexing/Code Division Multiple Access ("CDM/CDMA") with first spreading factor codewords, whereby a CBR-CDMA data signal is generated; and

when said data stream is VBR data, communicating the VBR data stream using Time Division Multiplexing/Time Division Multiple Access ("TDM/TDMA") and CDM/CDMA with second spreading factor codewords." (emphasis added).

The Applicant respectfully submits that Kim and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Applicant at least with respect to claim 1 for "communicating the CBR data stream using Code Division Multiplexing/Code Division Multiple Access ("CDM/CDMA") with first spreading factor codewords" and "communicating the VBR data stream using Time Division Multiplexing/Time Division Multiple Access ("TDM/TDMA") and CDM/CDMA with second spreading factor codewords" as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1. More specifically and as recited above, in support of at least claim 1, the Applicant in the Specification specifically recites:

"In any embodiment according to this invention, the appropriate CBR spreading factor is determined and fixed. The VBR spreading factor, on the other hand, depends on the amount of the VBR traffic: the more VBR traffic, the smaller the factor. At the same time, the smaller the VBR factor, the fewer CBR users that can be supported. Hence, the VBR spreading factor is a parameter that determines the trade-off of how much of both types of traffic has to be handled. That parameter need not be fixed, e.g., it could be periodically adjusted to the traffic profile. In addition, the VBR spreading factor can depend only on the total amount of VBR traffic

Serial No. 09/742,669
Page 19

and on the number of CBR users. The number of VBR users need not enter into the trade-off. The number of VBR users that can share the VBR signal is determined by how that signal is partitioned in time slots, independently of the spreading factors." (See Specification, page 7, lines 9-19).

The Applicant further recites:

"More particularly, the spreading factor for the CBR streams is readily determined from the data rate required by the corresponding application. A voice telephony session, for instance, requires a data rate on the order of 10 Kbps, which can be attained with a relatively large spreading factor (64 is commercial value in IS-95 CDMA). A video session would require a higher data rate and thus a smaller spreading factor, etc. The method of determining the spreading factor for CBR signals is known to those of ordinary skill in the art, for example, as based on the required data rate and the chip rate of the system, which is a parameter that is given by the available bandwidth. From the spreading factors, the transmit power required by every stream can be also calculated easily given some target Signal-to-Interference Ratio (SINR), the interference level, and the location of the corresponding terminal. Since the CBR signals have strict requirements in terms of service, they should be allocated power first. Once they all have their required power, whatever power is left from the available power budget is allocated to the VBR signal. The spreading factor of the VBR signal is then adjusted, on a slot-by-slot basis, so that the VBR users can also meet their target SINR given their levels of interference, location, and data rate. Notice that every slot corresponds to a different VBR data stream, thus the need to vary (possibly) the VBR spreading factor. Also, the power requirements of the CBR users will vary over time and that will cascade into a variation in the leftover power for VBR and thus into corresponding spreading.

The architecture of a multiple access (implying many transmitters and a single receiver) implementation of the present invention is shown in Fig. 1. In the multiple access architecture, the transmitters first spread VBR data using CDMA with a VBR spreading factor, thereby creating VBR-CDMA data. The transmitters then upconvert the VBR-CDMA data to the appropriate RF carrier frequency and perform the TDMA interleaving by bursting the VBR-CDMA RF data transmissions at individual time slots within the allocated VBR-CDMA bandwidth, thus transmitting VBR-CDMA-TDMA data." (See Specification, page 7, line 20 through page 8, line 18).

Serial No. 09/742,669
Page 20

Again, it is evident from at least the portions of the Applicant's specification presented above, that the invention of the Applicant is directed, at least in part, to a method and communication system wherein CBR data stream is communicated using CDM/CDMA with first spreading factor codewords and VBR data is communicated using TDM/TDMA and CDM/CDMA with second spreading factor codewords. In the invention of the Applicant, the first spreading factor for the CBR data is first determined since the CBR signals have strict requirements in terms of service. The second spreading factor codewords for the VBR data is determined at least from what is left of a total power budget after CBR power allocation and from VBR SINR requirements.

As conceded by the Examiner and agreed upon by the Applicant, there is absolutely no teaching, suggestion or disclosure in Kim for using a combination of TDMA and CDMA with second spreading factor codewords for communicating VBR data as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1. Furthermore, the Applicant submits that there is absolutely no suggestion or motivation in either Kim or Sato to combine the teachings of the references to attempt to teach the invention of the Applicant.

That is, for prior art reference to be combined to render obvious a subsequent invention under 35 U.S.C. § 103, there must be something in the prior art as a whole which suggests the desirability, and thus the obviousness, of making the combination. Unroyal v. Rudkin-Wiley, 5 U.S.P.SQ.2d 1434, 1438 (Fed. Cir. 1988). The teachings of the references can be combined only if there is some suggestion or incentive in the prior art to do so. In re Fine, 5 U.S.P.SQ.2d 1596, 1599 (Fed. Cir. 1988). **Hindsight is strictly forbidden. It is impermissible to use the claims as a framework to pick and choose among individual references to recreate the claimed invention** Id. at 1600; W.L. Gore Associates, Inc., v. Garlock, Inc., 220 U.S.P.Q. 303, 312 (Fed. Cir. 1983).

Moreover, the mere fact that a prior art structure could be modified to produce the claimed invention would not have made the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 23

Serial No. 09/742,669
Page 21

U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992); In re Gordon, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). More specifically, the Applicant submits that the teachings of Kim for a method of transmitting CBR using CDMA and VBR traffic using TDMA comprises no suggestion or motivation for the combination of the teachings of Sato for a mobile communication system capable of transmitting and receiving a radio signal obtained by TDMA and CDMA without interference and vice versa.

The Applicant further submits that even if there was a motivation or suggestion to combine the references in either of the references (which the Applicant believes that there is none), the teachings of the Sato fail to bridge the substantial gap between the Kim reference and the Applicant's invention at least with respect to the Applicant's claims 1 and 14 and actually teach away from the invention of Kim. More specifically, Sato specifically recites:

"In a communication system from a mobile station to a base station, a transmitter of the mobile station subjects a sequence of transmission signals to both of time division multiple access (TDMA) and code division multiple access (CDMA) to produce a radio output signal located in a time slot of a frame." (See Sato, Abstract).

The above teachings of Sato are in contrast to Kim, which teaches a method of transmitting voice (CBR) using CDMA and data (VBR) using TDMA. An attempt to combine the teachings of Sato with Kim would destroy the functionality of the invention of Kim which teaches a method of transmitting voice (CBR) using CDMA and data (VBR) using TDMA. More specifically, the combination of Kim and Sato would result in Kim's invention transmitting voice (CBR) and data (VBR) using both CDMA and TDMA. This is in contrast to the original teachings of Kim. As such the Applicant submits that the inventions are not capable of being combined. The Applicant further submits that even if Kim and Sato were combined, the resulting invention of the combination of the references, specifically a mobile communication system capable of transmitting and receiving a radio signal obtained by TDMA and CDMA without interference, wherein voice (CBR) and data (VBR) are transmitted using both CDMA and TDMA, fails to

Serial No. 09/742,669
Page 22

teach, suggest or make obvious at least "communicating the CBR data stream using Code Division Multiplexing/Code Division Multiple Access ("CDM/CDMA") **with first spreading factor codewords**" and "communicating the VBR data stream using Time Division Multiplexing/Time Division Multiple Access ("TDM/TDMA") and CDM/CDMA **with second spreading factor codewords**" as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1.

For at least the reasons described herein, the Applicant respectfully submits that the teachings of Kim and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious, the invention of the Applicant at least with respect to independent claim 1.

Therefore, the Applicant submit that independent claim 1, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

Likewise, independent claim 14 recites similar relevant features as recited in independent claim 1. As such and for at least the reasons disclosed herein, the Applicant respectfully submits that independent claim 14 is also not rendered obvious by the teachings of Kim and Sato, alone or in any allowable combination, and also fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

Furthermore, dependent claims 2-13 and 15-26 depend either directly or indirectly from independent claims 1 and 14 and recite additional features therefor. As such and for at least the reasons set forth herein, the Applicant submits that none of these claims are obvious with respect to the teachings of Kim and Sato, alone or in any allowable combination. Therefore the Applicant submits that dependent claims 2-13 and 15-26 also fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims independently in subsequent prosecution.

Serial No. 09/742,669
Page 23

CONCLUSION

Thus, the Applicant submits that none of the claims presently in the application are obvious under the provisions of 35 U.S.C. § 103. Furthermore, the Applicant also submits that all of these claims now satisfy the requirements of 35 U.S.C. §112. Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Jorge Tony Villabon at (732) 530-9404 x1131 or Mr. Eamon J. Wall at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,



Eamon J. Wall
Reg. No. 39,414
(732) 530-9404

CUSTOMER #26,291
Moser Patterson & SHERIDAN, LLP
595 Shrewsbury Avenue, Suite 100
Shrewsbury, New Jersey 07702
732-530-9404 - Telephone
732-530-9808 - Facsimile